REMARKS

In the Final Office Action, the Examiner rejected all pending claims 1 and 4-29. The Examiner reasserted the rejections of claims 1 and 4-29 in the Advisory Action. By this paper, claims 1, 4, 6, 7, 9, 17-20, and 24-27 are amended, claims 28 and 29 are cancelled, and new claims 30 and 31 are added. These amendments do not add any new subject matter. Upon entry of these amendments, claims 1, 4-27, 30, and 31 will be pending in the present application. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

On a preliminary note, although Applicants disagree with the Examiner's rejection, Applicants removed the recitation of "characterizing a level of change" in favor of alternative claim recitations as set forth in the amended claims. Applicants believe that these claim amendments should remove the Examiner's objections without narrowing the scope of the instant claims as one skilled in the art would clearly understand the term "characterizing" to constitute some type of calculation, quantification, or computation as described in the present application.

Claim Rejections under 35 U.S.C. § 102

In the Final Office Action, the Examiner rejected claims 1 and 4-29 under U.S.C. § 102(b) as anticipated by Pieper et al. (U.S. Patent No. 5,825,908). Applicants respectfully traverse this rejection.

Legal Precedent

Anticipation under section 102 can be found only if a single reference shows <u>exactly</u> what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). Every element of the claimed invention must be <u>identically</u> shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Indeed, the prior art reference must show the <u>identical</u> invention "in as complete detail as contained in the ... claim" to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Furthermore, the pending claims must be given an interpretation that is reasonable and consistent with the <u>specification</u>. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *see also In re Morris,* 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); *see also* M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1326 (Fed. Cir. 2005) (*en banc*) (citations omitted). One should rely <u>heavily</u> on the written description for guidance as to the meaning of the claims. *See id.*

Brief Summary of Present Application

In accordance with embodiments of the present technique, a navigational tool may be provided for selection of images in a series of images. *See* Specification, ¶ [0007]. For example, in medical imaging, a large number of images (e.g., hundreds or thousands of images) may be acquired in a single imaging session or in multiple imaging sessions over time. *See* Specification, ¶¶ [0002]-[0004]. Cine mode viewing of these images may be excessively time-consuming. *See* Specification, ¶ [0005].

A navigational tool in accordance with embodiments of the present technique may include a scout tool which illustrates the amount of change from one image to the next. *See* Specification, ¶ [0041]. The amount of change may be represented by a difference index, which may be computed using various mathematical techniques. *See* Specification, ¶ [0042]. The scout tool may be illustrated as a graph in which the difference index between consecutive (e.g., spatially or chronologically adjacent) pairs of slices is charted. *See* Specification, ¶ [0045]; FIG. 6. A caregiver may use the scout image to determine which images show the most relative variance, which may indicate an anomaly in the images. *See* Specification, ¶ [0038]. Furthermore, the caregiver may access the images of interest by using a virtual tool to move directly to the images corresponding to the desired relative variance. *See* Specification, ¶ [0045].

Elements of Independent Claim 1 Omitted from the Cited Reference

Accordingly, amended independent claim 1 recites, *inter alia*, "<u>calculating a level of change</u> of the image data from one image to the next in the plurality of images; and presenting a

viewer with the <u>calculated levels of change</u> of the image data for the plurality of images."
(Emphasis added).

In sharp contrast, the Pieper reference discloses a system for scrolling through a series of images and switching between axial, coronal, and sagittal views of an imaged object. Rather than anticipating the present claims, the Pieper reference is an example of the extremely time-consuming image review method which the present invention aims to improve. Specifically, the Pieper reference provides a system for scrolling through images in three dimensions but does not provide any reference for determining which images may be of most interest to a caregiver.

The Examiner previously argued that "characterizing" the level of change and presenting the viewer with "indicia" of the level of change should be broadly interpreted to encompass any technique in which two different images are shown. Although displaying an image may be considered "characterizing" the image, simply displaying two images does not constitute "characterizing a level of change" between the two images as previously recited in claim 1, and certainly does not constitute "calculating a level of change" as presently recited in claim 1. Indeed, if a user has to discern differences between the two images, there is clearly no characterization or calculation of the differences. While Applicants strongly disagree with the Examiner's interpretation of the prior art as anticipating claim 1, Applicants have amended claim 1 to clarify the meaning of these terms as clearly described in the specification in an effort to advance prosecution.

The Examiner has not cited anything in the Pieper reference that discloses "calculating a level of change" as recited in independent claim 1. Indeed, nothing in the Pieper reference teaches a technique in which the difference between images is calculated, quantified, computed, described, stated, or in any way characterized. A viewer therefore cannot be presented with the "calculated level of change" as further recited in independent claim 1. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 1 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 1 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 9 Missing from the Cited Reference

Amended independent claim 9 recites, *inter alia*, "generating a scout navigation tool by quantifying a level of change of the image data from one reconstructed image to the next in the plurality of reconstructed images, the scout navigation tool including a graphical representation of progressive change between reconstructed images of the plurality of reconstructed images and a virtual tool for navigating through the plurality of reconstructed images based upon the level of change." (Emphasis added).

As discussed above in reference to claim 1, nothing in the Pieper reference discloses quantifying a level of change between images as recited in the present claim. In addition, in rejecting independent claim 9, the Examiner stated, "The level of change between these images is evident in that each slice is slightly different from the last and that each slice represents a change in position in the 3D model. This is interpreted as a graphical representation of progressive change." Final Office Action, page 6. Again, the Examiner's interpretation of the cited reference is clearly erroneous and even nonsensical. The Examiner seems to be arguing that showing two different images in succession constitutes a graphical representation of the differences between those images. As discussed above, the Pieper reference does not disclose quantifying, calculating, computing, describing, stating, or in any way characterizing the level of change between images. Accordingly, nothing in the Pieper reference discloses or suggests generating a graphical representation of the quantified level of change between images as recited in the present claim. Furthermore, the Examiner has not cited anything graphical in the Pieper reference which could be construed as the graphical representation. The Examiner's assertion that scrolling through a series of images is equivalent to generating a graphical representation of the level of change between images cannot be sustained.

In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 9 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 9 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 20 Omitted from the Cited Reference

Independent claim 20 recites, *inter alia*, "processing circuitry configured to compare image data representative of a plurality of images acquired via a medical imaging system and not as video, and to generate a scout navigation tool by computing a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a graphical representation of progressive change between images of the plurality of images and a virtual tool for navigating through the plurality of images based upon the level of change." (Emphasis added)

As discussed above, the Examiner's interpretation of the Pieper reference is clearly erroneous. Scrolling through a series of images does not anticipate circuitry configured to generate a graphical representation of computed levels of change between images as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 20 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 20 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 24 Missing from the Cited Reference

Independent claim 24 recites, *inter alia*, "means for calculating a level of change of the image data from one image to the next in the plurality of images; and means for presenting a viewer with the calculated levels of change of the image data for the plurality of images." (Emphasis added).

Applicants respectfully note that independent claim 24 includes means-plus-function language, as set forth in 35 U.S.C. § 112, paragraph 6, and should be examined in accordance with this body of law. As may be appreciated, with respect to 35 U.S.C. § 112, paragraph 6, an Examiner "may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination." *In re Donaldson Co.*, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994); *see also* Manual of Patent Examining Procedure § 2181. Applicants respectfully note that the present rejection does not comport with the controlling case law or M.P.E.P. sections and is, therefore, deficient. Accordingly, the Examiner has failed to establish a

prima facie case of unpatentability in accordance with the relevant statutory and precedential authority outlined above.

Furthermore, as discussed above, the Examiner's rejection of independent claim 24 is based on an erroneous and nonsensical interpretation of the Pieper reference. Specifically, nothing in the Pieper reference discloses or anticipates any means for <u>calculating the level of change</u> between images as recited in the present claim. Clearly, therefore, the viewer cannot be presented with the <u>calculated</u> levels of change. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 24. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 24 under 35 U.S.C. § 102.

Elements of Independent Claim 25 Missing from the Cited Reference

Independent claim 25 recites, *inter alia*, "means for generating a scout navigation tool by <u>quantifying</u> a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a <u>graphical representation</u> of progressive change between images of the plurality of images." (Emphasis added).

As with independent claim 24, independent claim 25 includes means-plus-function language, as set forth in 35 U.S.C. § 112, paragraph 6. Accordingly, claim 25 should be examined in accordance with that body of law, as set forth in the controlling case law and M.P.E.P. sections. As the Examiner has not performed the required analysis, the Examiner has failed to establish a *prima facie* case of unpatentability in accordance with the relevant statutory and precedential authority outlined above.

Furthermore, as discussed above, the Pieper reference clearly does not anticipate independent claim 25. The cited reference does not teach or suggest means for generating a <u>graphical representation</u> of <u>quantified</u> levels of change between images in a series as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 25. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 25 under 35 U.S.C. § 102.

Elements of Independent Claim 26 Missing from the Cited Reference

Independent claim 26 recites, *inter alia*, "code stored on the at least one computer readable medium encoding routines for … <u>calculating</u> a level of change of the image data from one image to the next in the plurality of images, and presenting a viewer with the <u>calculated</u> levels of change of the image data for the plurality of images." (Emphasis added).

As discussed above, the Examiner's interpretation of the Pieper reference is clearly erroneous. The cited reference does not disclose "<u>calculating</u> a level of change of the image data from one image to the next" as recited in the present claim and therefore clearly cannot disclose code for performing such an action. Furthermore, as no levels of change are calculated, such calculated levels of change cannot be presented to the viewer as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 26. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 26 under 35 U.S.C. § 102.

Elements of Independent Claim 27 Missing from the Cited Reference

Independent claim 27 recites, *inter alia*, "code stored on the at least one computer readable medium encoding routines for … generating a scout navigation tool by <u>computing</u> a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a <u>graphical representation</u> of progressive change between images of the plurality of images." (Emphasis added).

Again, the Examiner's rejection of independent claim 27 based on the Pieper reference cannot be sustained. The Pieper reference clearly does not teach or disclose <u>computation</u> of the <u>levels of change</u> between images nor <u>graphical representation</u> of such computations. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 27. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 27 under 35 U.S.C. § 102.

New Claims

As set forth above, Applicants added new dependent claims 30 and 31. Applicants believe these claims are allowable at least based on their dependence from allowable base claims. In addition, new claims 30 and 31 recite limitations which are not anticipated by the cited prior art. For example, new claims 30 and 31 recite "calculating an absolute difference" of the change between images and determining a "difference index" based on the absolute difference. The Pieper reference does not disclose such a calculation, nor does it disclose determination of any value representative of the change between images. Accordingly, Applicants respectfully request the Examiner allow new claims 30 and 31.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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/Floron C. Faries/
Floron C. Faries
Reg. No. 59,991
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545